

CLAIMS:

1. A brush device having a brush that slides against an outer circumferential surface of a cylindrical rotor, the brush device comprising:
 - a base member;
 - a terminal retained by the base member;
 - 5 an electric wire, which connects the brush to the terminal; and
 - a cylindrical brush holder located on the base member, wherein the brush holder retains the brush, wherein the brush holder has a holder axis, which extends along the radial direction of the rotor, and wherein the brush is accommodated in and retained by the brush holder and is movable along the holder axis,
 - 10 wherein the brush holder has an opening portion, which is formed at the outer portion of the brush holder with respect to the radial direction of the rotor, and wherein the opening portion permits the brush to pass along a direction perpendicular to the holder axis.
2. The brush device according to claim 1, wherein the brush holder is a substantially rectangular tube.
3. The brush device according to claim 1, wherein the opening portion permits the brush to pass along the axial direction of the rotor.

4. The brush device according to claim 3, wherein the brush holder has a ceiling, which is perpendicular to an axis of the rotor, and wherein the opening portion is formed by cutting out part of the ceiling.
5. The brush device according to claim 3, wherein the brush holder has a ceiling, which is perpendicular to an axis of the rotor, wherein the ceiling has a guide hole, which extends along the holder axis and is connected to the opening portion, and wherein the guide hole permits the electric wire to pass through.
6. The brush device according to claim 5, wherein the width of the opening portion is greater than the width of the guide hole, wherein a coupling portion is formed between the guide hole and the opening portion, and wherein the coupling portion smoothly connects the guide hole to the opening portion.
7. The brush device according to claim 6, wherein the width of the coupling portion gradually increases such that the width of the coupling portion in the vicinity of the opening portion is greater than the width of the coupling portion in the vicinity of the guide hole.
8. The brush device according to claim 6, wherein the ceiling has opposing rims, which face each other to define the coupling portion, and wherein the opposing rims have curved surfaces.

9. The brush device according to claim 1, wherein the brush holder has opposing portions, which face each other to define the opening portion, wherein the opposing portions form a guide portion, and wherein the guide portion guides the brush to enter the opening portion.
10. The brush device according to claim 9, wherein the opposing portions of the brush holder are tapered or curved to function as the guide portion.
11. The brush device according to claim 1, wherein the base member has a retaining hole, which extends along the axial direction of the rotor, and wherein the terminal is inserted into the retaining hole to be retained by the base member.
12. The brush device according to claim 11, further comprising a torsion spring, which urges the brush toward the rotor, wherein the base member has a support column, which extends along the axial direction of the rotor, and wherein an annular portion of the torsion spring is fitted to the support column.
13. The brush device according to claim 1, wherein the terminal is a flat plate, wherein the electric wire is connected to a flat surface of the terminal, and wherein the flat surface of the terminal is perpendicular to the holder axis.

14. The brush device according to claim 13, wherein the terminal is located at a middle portion between the opening portion and a portion of the outer circumferential surface of the rotor that contacts the brush with respect to the direction of the holder axis.

15. A motor having a brush device that has a rotatable cylindrical commutator and a brush that slides against an outer circumferential surface of the commutator, the brush device comprising:
- a base member;
 - 5 a terminal retained by the base member;
 - an electric wire, which connects the brush to the terminal; and
 - a cylindrical brush holder located on the base member, wherein the brush holder retains the brush, wherein the brush holder has a holder axis, which extends along the radial direction of the commutator, and wherein the brush is accommodated
 - 10 in and retained by the brush holder and is movable along the holder axis,
- wherein the brush holder has an opening portion, which is formed at the outer portion of the brush holder with respect to the radial direction of the commutator, and wherein the opening portion permits the brush to pass along a direction perpendicular to the holder axis.